HEADQUARTERS
UNITED STATES FORCES KOREA
APO SAN FRANCISCO 96301-0010

USFK Pamphlet
No. 385-3

12 May 1987

Safety
A SYSTEMS APPROACH TO SEASONAL SAFETY

INTERIM CHANGES. Interim changes to this pamphlet are not official unless they are authenticated by the Adjutant General. Users will destroy interim changes on their expiration dates unless sooner superseded or rescinded.

CONTENTS

***This pamphlet supersedes USFK Pam 385-3, 28 June 1983.**

Section I. INTRODUCTION

1. PURPOSE. This pamphlet provides guidance to effectively implement a USFK systems approach to seasonal safety. It identifies seasonal safety hazards and describes procedures for accident prevention.

2. APPLICABILITY. This pamphlet applies to USFK commanders and all unit safety personnel who should use the information for planning command safety programs.

3. IMPACT ON NEW MANNING SYSTEM. This regulation does not contain information that affects the New Manning System.

4. REFERENCES. Required references are listed below.

a. CTA 50-970 (Expendable/Durable Items). Cited in subparagraph 12a.

b. EUSA Suppl 1 to AR 385-15 (Water Safety). Cited in paragraph 10.

c. FM 21-10 (Field Hygiene and Sanitation). Cited in subparagraphs 5a and 5b.

d. TB Med 507 (Prevention, Treatment, and Control of Heat Injury). Cited in subparagraph 5a.

e. TB Med 575 (Swimming Pools and Bathing Facilities). Cited in subparagraph 9d.

f. USFK Reg 190-1 (Motor Vehicle Traffic Supervision). Cited in subparagraphs 18c and 20b.

g. USFK Suppl 1 to AR 190-24 (Armed Forces Disciplinary Control Boards and Off-Installation Military Enforcement Services). Cited in paragraph 10.

Section II. SPRING AND SUMMER HAZARDS

5. HEAT INJURY. June marks the beginning of the hot season. Midsummer daytime temperatures can range from 80 to 95°F. Combined with high humidity, the high temperatures can cause heat stress to personnel. The following preventive measures are provided:

a. Perspiration or sweating results in loss of fluids and salts. Therefore, adequate water intake is the single most important factor in avoiding heat injury. Minimum water requirements are provided in FM 21-10 and TB MED 507. Personnel should be encouraged to drink water with greater frequency than is necessary to quench their thirst. The practice of limiting water intake by troops may result in heat casualties and therefore should be avoided. Two liters or more of sweat per hour may be produced in hot weather during physical exertion. This large loss of water and salt from the body, if not adequately replaced, may lead to a 6 to 8 percent loss of body weight. The dependence on the sensation of thirst to adequately replace the water lost by sweating has been shown to be ineffective. Unit officers and NCOs must ensure that their troops drink water or other fluids in amounts not to satisfy thirst but to replace water lost from the body.

b. The normal diet usually contains an adequate amount of salt. However, personnel who are acclimatizing or sweating excessively may require additional salt. Undissolved salt tablets will not be used. Any additional salt that may be required will be administered by qualified medical personnel only. Guidelines and information concerning the acclimatization to heat are contained in FM 21-10.

c. Although the severity of heat injuries tends to increase with age and certain physical disorders, such as heart disease, there are simple rules to follow to avoid heat injuries--

(1) Do not dry out. Drink plenty of water and other fluids beyond that amount required for quenching thirst.

(2) Dress for the heat. Loose, lightweight, light-colored clothing reflects heat and sunlight and allows air to circulate around the body to help maintain normal body temperature.

(3) Acclimatize. Gradually get used to working in a hot environment to avoid thermal shock.

(4) Slow down. Sustaining high body activity rates in high temperatures and humidities will produce more heat and increase the amount of heat stored in the body while the amount of heat it loses is limited.

(5) Eat less. Eating smaller meals adds less fuel for the body's energy production. Foods that increase metabolic heat production also increase water loss.

(6) Look out for the body's early warnings. Know the warning signs. They include, but are not limited to, profuse sweating, headache, and tingling sensations in the extremities. If they occur, immediately reduce your level of activity, or stop and get out of the heat.

(7) Limit exposure to the hot environment. Physical stress increases with the amount of time spent in the hot environment. Time should be spent out of the heat for at least a few hours of the day.

(8) Avoid exposing the skin to too much sun. A sunburn reduces the heat dispersion ability of the body in the affected areas.

d. The Wet Bulb Globe Temperature Index.

(1) The Wet Bulb Globe Temperature Index is a numerical indicator by which the air temperature, air movement, relative humidity, and heat from sunlight can be expressed as favorable or unfavorable for certain types of activities in hot environments. The Wet Bulb Globe Temperature Index can be measured with a Wet Bulb Globe Temperature apparatus.

(2) Appendix A provides details on the use of the Wet Bulb Globe Temperature Index. Appendix A also lists the areas where the Wet Bulb Globe Temperature index will be monitored. Field teams of the 5th Preventive Medicine Unit will maintain the equipment and monitor the Index in the selected areas. The local medical treatment facility will maintain the monitoring apparatus in

areas where the 5th Preventive Medicine Unit is not present. In all cases, the Wet Bulb Globe Temperature Index will be reported to the area surgeon who will advise local commanders on the heat stress conditions.

6. MONSOON SEASON (RAINY SEASON).

a. The monsoon season in the Republic of Korea (ROK) occurs from late June through late September. Buildings with basements should have sandbags prepared to divert flood waters. Personnel should be designated to monitor the drainage ditches to ensure they are not clogged with debris that could cause water to back up and flood the area. Hilly areas with loose soil are vulnerable to mudslides if proper measures are not taken before the rainy season. Roads can flood in a short time. Roads that are known to be dangerous for crossing when flooded should be identified.

b. Windshield wipers are critically needed during the rainy periods. Wiper systems should be checked and changed, if necessary, before June.

7. MOTOR VEHICLES.

a. One of the obvious spring road hazards is potholes. Striking a pothole can cause extensive damage to the underside of a vehicle. Even worse, striking a pothole can result in loss of vehicle control.

b. Due to the lack of playgrounds in the ROK, many Korean children play on the roads or alongside the roads. Accidents occur when children suddenly dart across the street to retrieve a ball or just to play tag with other children. In rural areas where there are drop-offs alongside the roads, it is common for a child to appear suddenly from nowhere.

c. In the Korean countryside, it is common to find Koreans lying or sitting in groups on the roads. Animal and human-drawn carts are also prevalent in the area. These vehicles move slowly and compete with other motor vehicles for the use of the roads.

d. Pedestrians can dart out onto roads or suddenly appear from blind spots.

e. Minimizing vehicle dispatch and consolidating trips reduce exposure. The use of assistant drivers as an extra set of eyes for the driver is another strategy that has proved effective in preventing accidents.

f. In the ROK, gasoline supply points for privately owned vehicles are limited. Prior planning must be made before starting long trips. Drivers should not carry extra fuel in the trunks of their cars. Even a minor rear end collision can trigger an explosion.

g. Because snow tires are made for better traction in snow only, remove them in the spring when they are no longer needed. Otherwise, snow tires can be hazardous and costly when used in other than snow conditions. The physical characteristics of snow tires are such that they offer less traction on a road without snow. On long drives, vehicles with snow tires consume more gasoline. When radial snow tires are changed, they should be marked according to what wheel

mount they came off of, so that next winter they can be placed in the same position. Radials should never be mixed with nonradials. This combination creates a potential accident situation.

8. BICYCLING.

a. The US Consumer Product Safety Commission cites the following major accident patterns associated with bicycles:

(1) Loss of control. This occurs because of difficulty in braking; riding too large a bike, riding double on banana seats, rear fenders, handlebars, or the horizontal top tube on a man's bike; stunting: and striking a rut, bump, or obstacle.

(2) Mechanical and structural problems. These include brake failure, wobbling or disengagement of the wheel or steering mechanism, difficulty in shifting gears, chain slippage, pedals falling off, and spoke breakage.

(3) Entanglement of a person's feet, hands, or clothing in the bicycle.

(4) Foot slippage from pedal.

(5) Collision with a car or another bicycle.

b. Riding bicycles off post is dangerous, especially when competing with unpredictable traffic. In a collision, bicycles afford no protection.

c. Selection of the right size bicycle, proper maintenance of the bicycle, and the use of safety items such as reflectors, handle grips, lights, and so forth, are essential in preventing bicycle accidents.

9. ON-POST SWIMMING POOLS.

a. Although on-post swimming pools are much safer than off-post swimming areas, there are still many dangers in and around on-post swimming pools.

b. Users of swimming pools include nonswimmers. A safety float line should be placed where the bottom slope begins to deepen (approximately the 4-foot level). Parental and lifeguard supervision and swimming instruction can be effective in preventing pool-related accidents.

c. Entering extremely cold water or entering the pool immediately after eating can cause cramps. Pool temperature can be controlled by engineers or by using an operating seasons control device that regulates water temperatures. Lifeguards must be trained to recognize possible cramp attacks.

d. Shallow dives or short dives from the sides of pools can result in swimmers striking their heads, resulting in unconsciousness. Dived from boards should be restricted to one person at a time. Divers should be required to go straight off the end of the board and not off the side. Ten-minute rest periods each hour are recommended for pools with large numbers of young patrons and nonswimmers. Pools should be controlled per TB MED 575.

e. The use of alcoholic beverages in swimming pool areas can cause patrons to misjudge their limitations and reduce their ability to recognize common dangers. If total prohibition of alcoholic beverages is not favorable, necessary procedures should be established to set up designated areas for consumption of such beverages. Pool supervisors should prohibit anyone who appears to be under the influence of alcohol from entering the controlled pool area.

f. Running and horseplay in the pool area can cause falls.

g. Broken glass containers can result in serious injury by cuts. Glass items should be prohibited within a stated distance of the pool. Another source of cuts is pool equipment. Daily inspections for sharp edges on ladders and other equipment should be conducted.

h. Improper use of diving boards can be dangerous. Patrons should be restricted from sitting near pinch points or placing their hands in such areas.

i. Contamination of pool areas can develop in rest rooms, showers, the pool itself, or areas adjacent to the pool. Pool supervisors should ensure the daily removal of trash from pool areas, control food products used near the pool, arrange for periodic pool inspections by medical personnel, and ensure hot water is available for showers.

j. Emergency telephone numbers for a doctor, ambulance, military police, and a fire and rescue unit should be readily available.

k. Pools with overhead electrical wiring should be closed during thunder and lightning storms.

l. Chlorine gas can cause serious injury or death. The transfer of chlorine cylinders should be done during hours of reduced personnel exposure. Engineer personnel working with the cylinders should be provided protective masks and filters.

m. Sunburns are serious and should be avoided by limiting one's exposure to the sun.

n. All drains below water level should be checked at frequent intervals for protective screens to prevent children from accidentally inserting their fingers or hands and becoming trapped underneath.

o. The pool should be governed by written standing operating procedures.

p. At the end of each day, the pool should be cleared; equipment should be shut down; and the pool area should be locked and secured. At the end of the season, all equipment should be inspected, and work orders or requisitions for equipment needing repair or maintenance before next season should be initiated. Life support equipment should be stored. An inspection of this equipment should be arranged 60 days before the start of the next season.

10. NATURAL BODIES OF WATER. Failure to recognize hazards (for example, rough water, strong currents, mud bottoms, and objects in the water) means trouble for any swimmer or nonswimmer. Natural bodies of water (for example, beaches, streams, lakes, reservoirs, and so forth) often contain these hidden dangers. Area and installation commanders, in accordance with USFK Suppl 1 to AR 190-24, will designate such places as off-limits to military personnel for wading, swimming, bathing, diving, frolicking, or boating when unsafe or unhealthful conditions exist. Further guidance can be found in EUSA Suppl 1 to AR 385-15.

11. HEATING SYSTEMS.

a. Charcoal ondol heating may be used anytime during the rainy season (late June to late September) to dry out the dampness. Leaks in an ondol heating system will allow toxic carbon monoxide emitted from burning charcoal to enter the room.

b. Carbon monoxide is a colorless, odorless, and tasteless gas generated by all heaters using carbon fuels. Exposure to this gas can cause death. Heaters of this kind are kerosene heaters, charcoal ondol heaters, and charcoal space heaters. Proper ventilation of rooms and maintenance of systems are essential in preventing carbon monoxide exposure.

c. Danger of fire exists primarily with kerosene heaters. Only kerosene should be used because other fuels could cause the heater to malfunction, possibly resulting in a fire.

12. ELECTRIC FANS.

a. If a fan guard has openings greater than one-half inch, the guard is inadequate. People can accidentally expose their fingers to moving fan blades. Appropriate fan guards should be ordered through respective supply points using the following information:

NOMENCLATURE	NSN
Safety guard, fan, large	4140-00-255-2390
Safety guard, fan, small	4140-00-341-5520
Safety guard, fan, 16" nylon mesh	4140-00-W60-3934

The justification used when ordering fan guards should include the statement "expendable item authorized by CTA 50-970."

b. Other hazards involving electric fans are--moving a large fan while it is operating positioning a fan near a doorway where it will block an exit; overheating cords by using light extension cords or by powering too many appliances with one extension cord; and placing fans too close to curtains where curtains could get caught in the fan, block air flow, cause the motor to overheat, and possibly cause a fire.

13. OTHER TOPICS. The spring and summer periods involve many more hazards than those described above. The intent of this section is to identify other common spring and summer hazards not described above. The following topics may be used to expand the command's spring and summer safety program:

a. Expressway driving.

b. Fire.

c. Fog.

d. Health.

e. Off-post hazards.

f. Planting and harvesting seasons.

g. Recreation.

h. Sports.

i. Use of seat belts.

Section III. FALL AND WINTER HAZARDS

14. CARBON MONOXIDE POISONING. Carbon monoxide is a colorless, odorless, tasteless, and all too frequently, lethal gas. It is found in combustion gas of coal, wood, butane, and propane heating devices; oil or gas burners; internal combustion engines; and explosives. In the ROK, most cases of carbon monoxide poisoning resulting in permanent injury or death occur in vehicle driver compartments, communications vans, crew areas of tanks, maintenance shops, and living facilities, especially the Korean type where charcoal, pressed coal or wood, and kerosene are the predominant fuels used for heating or cooking, either above or below the floor.

a. Carbon monoxide may cause headache, dizziness, or nausea, but do not count on it. If such symptoms are experienced, immediately warn others. Seek fresh air and medical attention. The prevention of carbon monoxide poisoning requires coordinated application of engineering control measures, periodic surveys and inspections, and most importantly, a continuing program of health education and supervision.

(1) Periodic surveys and inspections should be made by unit commanders and coordinated with local medical and safety personnel. The purpose of these surveys and inspections is to identify, evaluate, and control potential carbon monoxide exposures. Technical advice may be obtained by contacting the Commander, 5th Preventive Medicine Unit, APO 96301-0020.

(2) Exhaust ventilation systems should be installed in automotive shops, motor pools, and other permanent structures where fuel-operated engines are to be used indoors.

(3) There must be command emphasis on educating all personnel, particularly the careless, the indifferent, and new arrivals, concerning carbon monoxide poisoning. Personnel must be instructed on the danger of sitting in parked vehicles in which the motor is running and other hazards associated with carbon monoxide. The danger of carbon monoxide poisoning by Korean ondol hot air heating systems and coal stoves used in Korean houses should be especially

emphasized. A carbon monoxide poisoning orientation should be given no later than 31 October of every year. Personnel arriving in the ROK will be given a carbon monoxide poisoning orientation after their initial orientation and as part of their unit inbrief.

b. See Appendix B for carbon monoxide leak areas in a home using charcoal heating.

15. COLD WEATHER INJURY.

a. The effects of cold weather depend on a combination of temperature, humidity, and wind speed, which is commonly called "windchill" or "chill factor." In general, the effects of cold are increased by either a lowering of the temperature, a higher wind speed, or an increase in humidity (see app C). Cold injury is defined as tissue trauma produced by exposure to cold. For practical purposes, cold injuries may be divided simply into freezing and nonfreezing types. An example of a freezing type is the well-known frostbite (superficial or deep). The nonfreezing types are chilblains, trench foot, and immersion foot.

(1) Frostbite. The most common and most dangerous type involves actual freezing of the flesh and destruction of body tissue.

(2) Trench foot or immersion foot. Results from prolonged exposure to wet, cold footgear or outright immersion of the feet at temperatures usually below 50°F.

(3) Chilblains. Inflammation, swelling, or breaks of the skin caused by freezing accompanied by high humidity.

b. In the early stages of frostbite, there is no pain as the involved area becomes numb. One of the first signs is a paleness of the area involved. A gray or white spot will appear in that area. Later, there is a tingling and stinging ache. Eventually, there is severe pain, and finally, gangrene may result. Most frostbite injuries will occur within 5 minutes of a person's entering a cold area. Personnel should be dressed properly before departing from a vehicle, moving from one building to another, or when remaining in the open.

c. The "buddy system" may be used for early detection of frostbite. Personnel should frequently examine their own exposed parts and those of their companions for signs of effects of cold. A grayish or whitish; waxy appearance of the skin is an early sign of freezing. When any part shows this sign, first aid should be applied at once. Distinct pain is usually not present as a warning that frostbite or freezing is occurring. Loss of feeling when the skin is touched is another important sign. In very cold weather, stiffness cussed by freezing can be detected by wrinkling of the facial skin.

d. Some "do nots" are important to the first aid treatment of cold injures. Do not rub, touch, or manipulate the frozen parts. Do not treat frostbite with the application of ice or snow. Get the individual into a warm area (room temperature) as soon as possible. Once an injured part of the anatomy has been warmed, do not use or reexpose it to the cold because severe injury can result. Remove constricting or damp clothing. Get medical assistance.

e. Snow blindness can result from exposure to snow glare. In the absence of eye protective devices, the eyes should be rested by closing them frequently.

f. Because all types of cold injury can result in permanent damage to the body tissues, it is important that all possible steps be taken to prevent such injuries.

(1) Wear clothing that is thick, lightweight, windproof, multilayered, and loose-fitting with air spaces between the layers. The layers will trap and conserve the body heat. The clothing should permit ventilation of the body to prevent sweat accumulation. Excessive sweating can be avoided by loosening or removing outer garments when working in the cold. Tight, constrictive clothing should be avoided because it may impair circulation. Clothing must be kept dry and clean at all times.

(2) Stay in top physical condition. Maintain good nutrition, practice good personal hygiene, and avoid mental and physical fatigue. Do not drink alcoholic beverages before going out in the cold because alcohol causes dilation of the blood vessels in the skin and will thus increase heat loss. Excessive smoking also lowers the body's resistance to cold injury.

(3) Reduce the duration of exposure to the minimum consistent with the accomplishment of the job. Avoid frequent, sudden, or extreme changes of temperature. Alternate periods of exposure and rewarming.

16. FALLS. Each year in the United States, an average of 15,000 persons lose their lives from falls. More than one-fourth of all permanent impairments to the limbs, back, and trunk result from falls. The following guidance is given to minimize the potential for injuries of this nature:

a. Remove snow and ice from sidewalks and entrance ways promptly.

b. Use an abrasive (cinders, sand) to improve traction when ice cannot be removed.

c. Provide facilities for cleaning snow and ice from footwear at entrances to buildings.

d. Ensure the cleanup of water that collects just inside entrances as a result of snow and ice deposits from footwear.

e. Be extremely cautious when taking that first step outside in the morning. Snow, ice, and frost decrease traction.

17. FIRE DANGER. Fire danger is always present but requires special attention during the heating season.

a. Make frequent inspections, and correct conditions that could result in fires.

b. Provide noncombustible receptacles for trash, and establish procedures for its daily collection and disposal.

c. Select and train personnel on the proper operation of space heaters and other heating devices. Ensure inspection and testing before use. Eighth Army Posters 420-19EK (Operation of Space Heater) and 420-22EK (Operation of M1941 Tent Stove) provide useful information and are available through publication supply channels.

d. Ensure that only authorized fuels are used in heating devices and that all fuel containers have legible bilingual markings. Prohibit the use of locally manufactured liquid fuel heaters in EUSA buildings and vehicles.

e. Prohibit the overloading of electrical circuits, and prohibit the use of unauthorized electrical appliances on EUSA installations.

f. Prohibit drying of clothes on or immediately adjacent to heating units.

g. Provide noncombustible receptacles for cigarette butts, and enforce their use.

h. Prohibit smoking in bed at any time.

i. Establish and properly mark areas where smoking is permitted.

j. Prohibit the use of flame producing devices (for example, lighters, matches, welding torches) in the presence of flammable materials.

k. Limit access to central heating systems to Facility Engineer personnel.

l. Ensure that paints, greases, fuels, and flammable chemicals are appropriately segregated and properly stored.

m. Place oil-soaked rags in properly marked, closed metal containers.

n. Check electrostatic bonding and grounding devices in areas and on equipment. Ensure that resistance checks are made at appropriate intervals.

o. Do not remove fire extinguishers from original installation points except for maintenance or for use in extinguishing the fires as noted below:

(1) Class A fires (ordinary combustible materials such as wood, cloth, paper, rubber, and many plastics)--use pressurized water or water pump can.

(2) Class B fires (flammable liquids, oils, greases, tars, oil base paints, lacquers, flammable gases)--use carbon dioxide (CO_2) or ordinary dry chemical or multipurpose dry chemical (ABC type).

(3) Class C fires (energized electrical equipment such as motors and switches)--use carbon dioxide (CO_2) or dry chemical or multipurpose dry chemical.

(4) Class D fires (combustible metals such as magnesium, titanium, zirconium, sodium, and potassium)--use dry powder.

p. If chemical agents are known or suspected to be involved in a fire, ensure that all personnel are evacuated to an upwind position that is safe from the fire area.

18. MOTOR VEHICLES. Owners and operators of motor vehicles in the ROK during the winter driving season should be particularly aware of--

a. Proper maintenance of motor vehicles. Winter driving is difficult even if the vehicle is in top condition. Operating a vehicle with deficiencies is an invitation for trouble. The following procedures are suggested for properly maintaining vehicles for winter driving:

(1) Check head, tail, and parking lights and turn signals for proper operation and adjustment.

(2) Schedule vehicles for exhaust system checks with the motor pool not later than 31 October. If fumes are present in the cab, the presence of carbon monoxide should be suspected. Leave the cab windows opened slightly to allow adequate ventilation. Remember--carbon monoxide kills.

(3) Check radiator hoses, hose clamps, and radiator fittings frequently for evidence of leaks. Do not forget the antifreeze.

(4) Check the windshield, rear glass, and mirror for cracks or other defects that may affect visibility.

(5) Test the windshield wipers and washers. Make sure the blades wipe the windshield clean. Ensure that each vehicle has an ice scraper. An ice scraper, FSN 7920-00-045-2566, is available through supply channels.

(6) Check the braking system to see that it is even and positive. Check the hand brake also. It could become the only means of stopping.

(7) Check heaters and defrosters for proper operation.

(8) Check the battery regularly.

(9) Check the condition of the tires. They should be in good condition. There are two ways to tell when it is time to replace tires. Some tires have built-in wear bars that appear as smooth bands across the face of the tire when only one-sixteenth inch of tread remains. You can also test tire tread by inserting a Lincoln head penny in the tread groove. Holding the penny at Lincoln's neck, insert the top of the penny into the groove. If the top of Lincoln's head shows, tread is worn below one-sixteenth inch. Good treads on all tires contribute greatly to positive and even control.

b. The proper use of snow tires and tire chains.

(1) When installing snow tires, ensure that radial tires are not mixed with nonradial tires. If installing old radial snow tires, ensure that they are installed on the same wheel mount that they came off of last spring. When removing regular radial tires to install snow tires, ensure that they are marked as to what wheel they came off of so next spring they can be placed in the same position.

(2) On loosely packed snow, reinforced tire chains provide 313 percent better starting ability than regular tires. On glare ice, reinforced tire chains provide 409 percent better starting ability than regular tires. Installation of tire chains is easier on firm level ground or in a motor pool area than in a snow bank or ditch. Evaluate the road conditions carefully and make timely decisions on the use of chains.

(3) Tests have shown that in order to provide the same stopping ability available on dry pavement at a speed of 50 miles per hour (mph), your speed on ice must not be more than 25 mph with reinforced tire chains or 15 mph with special winter tires.

(4) Better traction is gained when a load is distributed evenly on all wheels. All-wheel-drive vehicles operating without chains perform better than two-wheel-drive vehicles with chains on the rear wheels.

c. The critical need for driving at safe speeds. Water, frost, snow, sleet, and ice all tend to reduce traction and seriously affect control. Each tire of your vehicle depends on friction of an area the size of your hand for traction. Remember to reduce speed for a safe trip. Do not push your luck. Refer to USFK Reg 190-1 for current speed limits in the ROK. The following rules should also be used for stopping and determining speed during the winter driving season:

(1) Start and stop slowly. Reduce speed to the safest minimum when attempting to change direction on a slick surface. When starting on packed snow or icy surfaces, use second or third gear rather than low. Engage clutch gradually and accelerate no more than is necessary to keep from stalling.

(2) Accelerate slowly. Quick acceleration will throw your vehicle into a spin on a slick road just as quickly as centrifugal force would if you attempted a turn too quickly on a dry road.

(3) Reduce speed when approaching or crossing an intersection, entering a curve, approaching the crest of a hill, traveling on narrow winding roadways, and when any special hazard exists with respect to pedestrians, other traffic, weather, or highway conditions.

(4) Use extreme caution when passing a bus or taxi discharging or receiving passengers. Travel at such a reduced speed that a prompt stop can be made for pedestrians who may step in front of your vehicle.

(5) Stop at pedestrian crosswalks when in use. Stop before entering a main supply route, main road, or a thoroughfare from a side or secondary road. Proceed only when safe to do so.

(6) Stop at all times when necessary to prevent an accident, regardless of who has the right-of-way.

(7) Children are one of the most common and unpredictable hazards on the Korean roads. The areas they utilize must be approached with extreme caution. In addition to the child that can be seen, expect one to be behind every parked car, oxcart, or bus. Keep in mind that you cannot stop or reverse direction as effectively on ice and snow-covered surfaces

(8) Aging not only dulls the sight and hearing but also the reflexes and general physical agility. This fact must be kept in mind as vehicle operators approach areas where pedestrians, especially elderly ones, are seen or are anticipated.

19. HAZARDOUS ROAD CONDITIONS. During the winter driving season, always expect the unexpected. Expect slippery surfaces around every curve; at every bridge, hill, overpass, and culvert; and in shaded areas where black ice is usually found. Fresh snow may conceal a dangerous icy surface underneath. Although snow or ice may be melting on roads and other areas, it may remain solidly packed or frozen on bridges (overpasses). Remember, most winter accidents are not caused by bad weather, but rather by drivers who fail to adjust their driving to the changing conditions. Drivers should report unusual road or weather conditions to the nearest Provost Marshal Office. The following guidelines for driving in hazardous conditions are provided:

a. Be aware that other operators of motor vehicles, oxcarts, bicycles, pushcarts, and that pedestrians may also be having difficulty with traction and control. Give them a wide margin for safety at all times. Whenever you intend to change speed or direction, signal early. Hold the signal long enough for other operators to recognize your signal.

b. As the distance needed to stop increases, increase the distance between your vehicle and the vehicle, oxcart, pushcart, bicycle, or pedestrian you may be following. By observing this important safety precaution, you permit adequate space to stop or maneuver, if necessary. In an emergency, a shorter stop can be made by jabbing (pumping) the brake pedal so that there is a series of fast, short brake applications. Each jab locks the wheels for just an instant. Avoid prolonged locking of the wheels. This retards steering and causes skids.

c. Use headlights when visibility is poor. If visibility is zero or hampers safe driving, pull off the roadway and wait for conditions to improve. Vehicle lighting, especially headlights, accumulate dirt quickly during the winter driving season. Check vehicle lighting regularly to ensure you can see and are being seen.

d. In an emergency that requires crossing a frozen stream, keep the cab door open to provide a safe exit in the event the ice gives way.

e. When operating a vehicle in winter driving conditions, always avoid rocks, other solid-type objects, and other vehicle tracks, if possible, because they can throw the vehicle sideways into a skid.

f. Descend moderate grades in the gear normally used to climb the same grade. On steep or very slippery grades, use at least one gear lower than normal,

g. After driving in slush, apply brakes lightly several times. This heats the brake shoes and drums and helps get rid of any moisture. It will also prevent brakes from freezing when the vehicle is halted. Do not try to free frozen brakes by force. Heat applied externally in a safe manner (for example, hot sand or hot water will free the frozen parts without damage).

h. When driving on icy roads that slope towards the outside, it may be helpful to straddle the center or the crown to avoid sliding. Watch for approaching traffic and maneuver to the side of the road in time to prevent going into a slide by an unsafe quick maneuver.

i. A skid is evidence of traveling too fast for the condition of the road. If the vehicle does skid, turn the front wheels in the direction that the rear end is skidding. Do not oversteer. Feed gas gently to maintain traction. Keep your foot off the brakes. When the vehicle is under control, brake with short, light jabs. Do not change gears, do not place the transmission in neutral, and do not panic.

j. During the winter, weather conditions will produce fog, a vapor condensed to fine particles of water. Fog restricts visibility drastically, both to see and to be seen. Fog is especially critical on expressways since visibility is needed where vehicles are traveling at fast speeds. During foggy conditions, slow down and drive with your headlights on to see and to be seen. Use of low beams is particularly important.

20. HIGAWAY CONDITION CODES.

a. Highway conditions are color coded. The highway condition codes apply to all military vehicles. Highway condition information may be obtained from local military police or security police stations, Armed Forces Korea Network radio station, or from the USFK Provost Marshal, Joint Police Information Center.

(1) Green--road conditions are normal.

(2) Amber--only vehicles essential for official business will be allowed to exit the installation.

(3) Red--only vehicles on emergency missions are allowed to exit the installation. Emergency missions are those that meet one or more of the following circumstances: for the protection of life and property, for emergency road repair or ice and snow removal crews, and for military police missions.

(4) Black--road is not passable.

b. Approval authority for release of government vehicles during amber or red conditions is restricted to officers in the rank of not less than captain, per USFK Reg 190-1. During amber or red conditions, owners and operators of privately owned vehicles, Korea Area Exchange taxis, and contract buses shall ensure their vehicles are operated only for essential trips and that the operators of these vehicles are fully informed concerning highway and weather conditions and the need for extreme care in driving. While these vehicles are not prevented from entering or leaving installations, owners and operators are encouraged to observe the rules established for adverse road and weather conditions.

21. EXPRESSWAY DRIVING. According to the Korea Highway Corporation, USFK personnel utilizing the expressway systems during the winter season (1 December through 31 March each year) must comply with the following Korean traffic rules and regulations:

a. Equipment to be carried in vehicles.

(1) Sedan (1/4-ton and below) snow or chains and two filled sand bags.

(2) Truck or bus--snow tires or chains, two filled sand bags, and one shovel.

(3) All vehicles--triangular warning kit.

b. Reduce vehicle speed during inclement weather as follows:

(1) Rain or accumulation of 2 cm (approximately three-fourths of an inch) of snow--reduce speed by 20 percent of the posted speed limit.

(2) Accumulation of 10 cm (approximately 4 inches) of snow--reduce speed by 50 percent of the posted speed limit.

22. NIGHT DRIVING. Darkness, which comes earlier during the winter season, calls for increased alertness and reduction of speed. The following rules should be followed:

a. Avoid weaving in traffic, especially at night. Observe lane markings and keep to the right except when passing. Stay well within your own lane, particularly on curves, and watch for approaching drivers who may be out of their lane or on the wrong side of the street.

b. Watch for pedestrians who are difficult to see at night, especially when they are wearing dark clothing. Always give them the right-of-way, and allow for poor judgment or confusion on their part. Watch for parked or stopped vehicles on the roadway, either with poor lights or no lights at all.

c. Give the drivers ahead plenty of room at night, and be particularly alert in watching for their signals. Put your directional signals on well in advance to allow for decreased visibility. Never trust your judgment in estimating the speed of an approaching vehicle by its headlights.

d. At the first sign of drowsiness, do something about it. Get off the roadway as soon as possible. If you do not have a competent relief driver, take a rest before continuing. Do not overdrive your headlights. You must see where you are going. If you are driving 20 mph on packed snow or ice, it will take you, under average conditions, about 195 feet to stop. If you can only see 150 feet ahead, you will be in serious trouble if a stopped vehicle or other obstruction requires you to stop at that speed.

e. Make special adjustments for bad weather at night. Bad weather further reduces your already severely limited vision. Do not use parking lights when in motion. You need your driving lights to see and to be seen. Dim your instrument panel lights to avoid glare inside the car.

f. If an approaching driver fails to dim his lights after you signal him, do not keep your bright lights on too. Dim your lights, and keep your eyes on the road shoulder or the lane edge to guide you. Reduce your speed to further ensure safety.

23. OTHER TOPICS. The intent of this section is to identify other prevalent fall and winter hazards. The following list will assist in expanding the command's approach to fall and winter safety:

a. Christmas tree decorations and lighting.

b. Drinking and driving.

c. Halloween safety.

d. Ice skating on manmade rinks.

m. Mountain climbing.

f. Selecting safe Christmas gifts for the children.

g. Skiing.

h. Use of seat belts.

Section IV. SAFETY DURING FLOODS AND TBUNDERSTORMS

24. FLOODS. Floods occur frequently in the ROK due to mountainous topography with little vegetation to retain the water, a water table that is close to the surface, and heavy rainfall. Heavy rains are caused by monsoons and typhoons. The summer monsoon season normally occurs about the middle of July; however, it may occur as early as June and as late as August, depending on the position of the polar front. During the monsoon season, as much as 40 inches of rain have fallen in less than 20 days. Rainfall of 7 to 8 inches within a 6 to 8 hour period is very possible. Floods caused by typhoons occur on an infrequent basis. However, they do occur in the ROK and cause widespread flooding and destruction. The southern portion of the ROK peninsula is subject to typhoons more frequently than the northern section. Typhoons have crossed the peninsula at various points to include the Seoul and Inchon area. Historically, typhoons have hit the southern part of the ROK during the early part of the summer and farther north later in the season. To ensure safety to personnel and equipment in a flood situation--

a. Restrict vehicle travel.

b. Do not park vehicles or equipment at the bottom of a valley, canyon, or on the bank of a small stream. Sudden flooding of these areas can result in loss or damage to material.

c. Exercise care in selecting bivouac areas. Small streams can rise several feet during the heavy rainfall.

d. Do not cross or ford streams. Streams laden with mud and debris have a tremendous force. Individuals have been known to drown, and vehicles have been known to overturn in streams with depths of less than 3 feet.

e. During and after heavy jams, beware of bridges over streams. High water can undermine bridges and render them unsafe.

f. Drivers should avoid traveling on the shoulders of roads during and after heavy rains. Road shoulders become weak to the point where they collapse under the weight of a passing vehicle.

g. On receipt of flood warnings, make sure all supervisors are alerted and, if necessary, move equipment and supplies to high ground.

25. LIGHTNING. Thunderstorms with lightning can occur at any time of the year. However, they occur most frequently in the ROK during the period May through September. During a thunderstorm, the following rules apply:

a. Stay away from isolated trees or poles in open areas.

b. Avoid open fields or bare hilltops.

c. Avoid large masses of steel in open terrain (for example, mounted guns, field pieces, wire fences, and vehicles). If caught suddenly in an electrical storm in a rubber-tired vehicle, stay in place. Personnel in rubber-tired vehicles usually escape injury in electrical storms since the vehicle's tires insulate the vehicle from the ground.

d. Do not seek shelter under a vehicle. The insulating effect of vehicle tires may cause a body under a vehicle to become the conductor of an electrical charge from the vehicle to the ground.

e. If in a group, spread out. Do not huddle together. A mass of bodies attracts lightning.

f. If inside a building during an electrical storm, remain clear of water pipes and electric or communication lines.

g. Whenever possible, disconnect the lead-in wire to field switchboards and telephones. (Note: Field telephones must be properly grounded to reduce electrical hazards.)

h. Do not use field telephones during electrical disturbances, except in an emergency or due to operational requirements.

i. When an electrical storm is approaching, supervisors of swimming pools [illegible] operations.

j. Avoid beaches, boats, and swimming areas. Avoid using [illegible] equipment.

k. Move quickly away from explosive items armed for electrical detonation, such as claymore mines, since lightning striking in the vicinity can cause detonation.

l. Evacuate guard towers unless the tower is equipped with lightning protection.

m. If an individual is struck by lightning, do not assume death has occurred. Prompt application of mouth-to-mouth resuscitation and closed-chest cardiac massage (basic life support) to the unconscious patient may save the victim's life. Seek medical assistance as soon as possible.

The proponent for this pamphlet is the office of the ACofS, J1. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to the Commander, USFK, ATTN: AJ-S, APO 96301-0010.

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APPENDIX A

WET BULB GLOBE TEMPERATURE INDEX

1. **Application.**

Wet Bulb Globe Temperature Index	Restrictions
Below 82	No restrictions: danger mainly to ill individuals.
82-84	Use discretion in planning heavy exercise, especially for unacclimatized troops. Allow shirts to be untucked and pants unbloused for outdoor work details.
85-87	Suspend strenuous exercise, to include marching. Avoid outdoor classes in the sun. Limited training activities may continue for acclimatized personnel.
88-90	Curtail all strenuous activity. Fully acclimatized personnel may continue limited activity for no more than 6 hours per day.
Above 90	Curtail all strenuous activity.

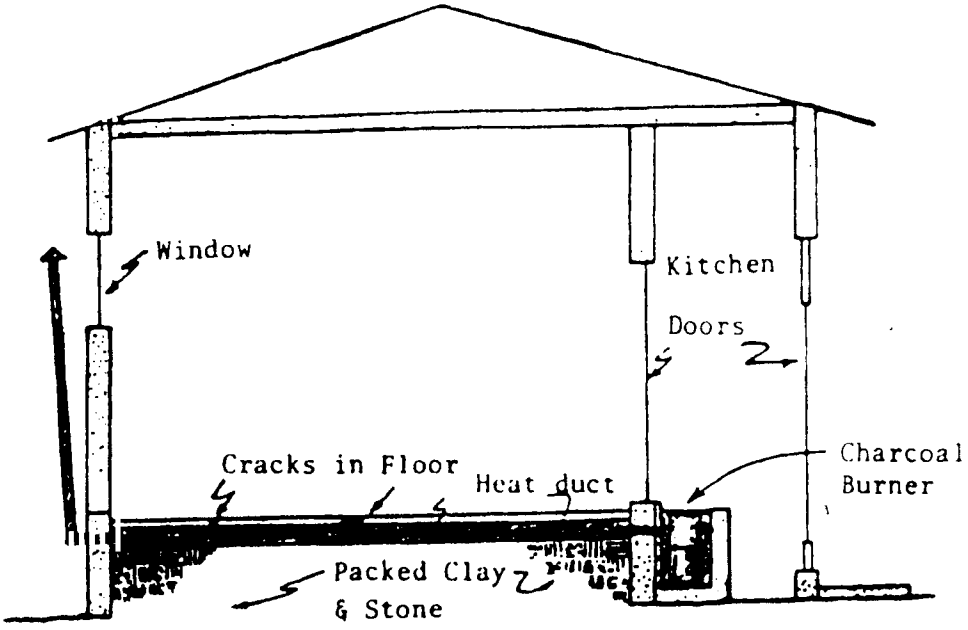
2. **Monitoring.**

Area/Location	Responsibility
Camp Ames	43d Surgical Hospital
Camp Carroll	150th Medical Detachment
Camp Casey	2d Medical Battalion
Camp Edwards	2d Medical Battalion
Camp Humphreys	43d Surgical Hospital
Camp Long	US Army Health Clinic
Camp Page	US Army Health Clinic
Camp Red Cloud	125th Medical Detachment
Camp Stanley	2d Medical Battalion
Camp Walker and Taegu Area	543d Dispensary

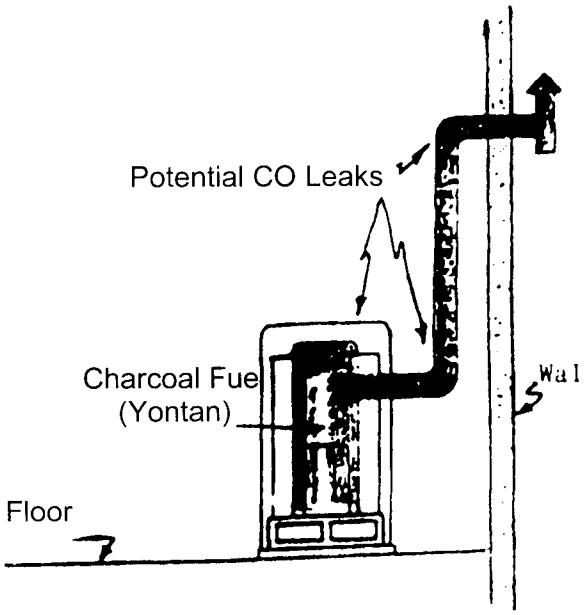
Area/Location	Responsibility
Chinhae	US Navy Hospital
Kunsan	US Air Force Hospital
Kwangju	US Air Force Dispensary
Osan	US Air Force Hospital
Pusan Area	545th Dispensary
Yongsan and Seoul Area	5th Preventive Medical Unit, LC #1

APPENDIX B

BRIQUET HEATING SYSTEMS



UNDER-FLOOR HEATER (ONDOL)



FLOOR-STANDING HEATER

APPENDIX C

CHILL CHART

	(2) ACTUAL THERMOMETER READING (°F)											
ESTIMATED WIND SPEED (IN MPH)	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	(3) EQUIVALENT TEMPERATURE (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
(1) 5	48	37	27	17	6	-5	-15	-26	-36	-47	-57	-65
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-145
(Wind speeds greater than 40 mph have little additional effect.)	LITTLE DANGER (for properly clothed person)				INCREASING DANGER (4)			GREAT DANGER				
	Danger from freezing of exposed flesh											
	Trench foot and immersion foot may occur at any point on this chart											

To use this chart first find the wind speed on the vertical column at the left of the chart. (1) Then find the actual thermometer reading on the horizontal column at the top.(2) Trace across and down from the appropriate numbers and find your equivalent temperature in the main body of the chart.(3) For example, at an estimated wind speed of 20 mph,(1) and an actual thermometer reading of 10°F,(2) the freezing effect of the combined cold and wind is equivalent to 25 below zero.(3) Note that the chart is divided into three parts, which indicate the overall threat posed by weather conditions. In our example above we are in the increasing danger area(4) and should take additional cold injury prevention precautions.

FIRST AID

1. Get to a medical facility as soon as possible.

2. Don't rub the frozen part or walk on frozen feet. It destroys tissue.

3. Maintain general body warmth.

4. Warm the frozen area with a warm hand while on the way to a medical facility. Don't delay seeking medical aid.